

SLEEPING SURFACE HAVING TWO LONGITUDINALLY CONNECTED BLADDERS

BACKGROUND OF THE INVENTION

[0001] Airbeds are rapidly gaining popularity as an alternative to inner spring mattresses. One of the most attractive features of an airbed is the inherent firmness adjustability. As opposed to a non-adjustable inner spring mattress, the firmness of an air bed can be quickly adjusted simply by changing the air pressure in the bladders of the bed. The larger beds include two juxtaposed bladders, thereby providing two independently adjustable sleep surfaces in a single bed.

[0002] Originally, beds offering two bladders were constructed simply by providing a cover, inserting foam borders around the inner sidewalls of the cover to provide a desirable shape for the mattress, and inserting two independent juxtaposed bladders inside the foam borders. Some customers expressed concern that when they were on inside edge of their bladder, toward the center of the bed, their body weight forced all of the air in the bladder toward the outer side of the bladder, leaving them in a low point on the mattress. If their sleeping partner was laying on the center of the other bladder, the inside edge of the spouse's bladder would be fully inflated. The discontinuity between the inside edge of the compressed bladder and the fully inflated adjoining edge of the adjacent bladder, created an uncomfortable sleeping surface. Though this problem was somewhat alleviated by the incorporation of foam covers and pillow top mattress covers, the effect was still noticeable.

[0003] Recently, another advantage of airbeds has resulted in the development of sleeper sofas with airbed mattresses. The advantage is that the airbeds can be deflated, virtually eliminating the space used by the mattress. Conventional sleeper sofa designs are plagued with a struggle between providing a comfortable sleep surface when the bed is deployed, and providing an attractive sofa when the bed is hidden away. A thick, comfortable mattress is difficult to fold into a couch. Mattresses that are foldable are too thin to insulate a sleeper from the non-uniform support surface under the mattress.

[0004] Airbed mattresses eliminate this problem because they can be deflated before the bed is folded into the couch. Thus, the thickness of the mattress is completely independent of the mechanical structure of the sofa mechanisms. The development of airbed sleeper sofas has quickly progressed to the inclusion of a mattress having two bladders.

[0005] A sleeper sofa airbed mattress with two bladders brings with it the same potential problem of a gap between the mattresses when inflated. The deflation of the bladders during storage creates a new potential problem as well. Namely, the deflated bladders may become overlapped or otherwise wrongly positioned during the folding and unfolding of the sleeper sofa. Placing a foam border between the bladders is not effective because the foam border itself is likely to become displaced when the bladders are deflated.

[0006] Thus, there is a need for an airbed mattress having two independent bladders that remain in position while being inflated, deflated, folded and unfolded. There is a further need for this mattress to provide a minimum level of firmness across the extents of the mattress so a sleeper does not feel drawn to a depression in the middle of the bed.

BRIEF SUMMARY OF THE INVENTION

[0007] The present invention relates to an airbed mattress that provides a solution to the aforementioned problems. More specifically, the present invention relates to an airbed mattress that includes two juxtaposed mattresses that are joined along adjoining longitudinal edges. The union formed not only keeps the bladders in place during deflation and folding, a bridge is formed between the mattresses creating a relatively constant sleep surface across the extents of the mattress.

[0008] Thus, one aspect of the present invention provides a sleep surface for two people comprising a first bladder having a longitudinal side and a second bladder having a longitudinal side attached to the longitudinal side of the first bladder. Each bladder is constructed and arranged to maintain an air pressure therein that is independent of an air

pressure in the other bladder. The feature of two independently adjustable sleep surfaces is thus maintained.

[0009] The longitudinal sides of the two bladders may be heat welded, zipped, connected with hook and loop fasteners, snap fasteners, tied, or any acceptable fastening means. Additionally, the sides of the two bladders may be connected at an upper edge or both and upper and lower edge.

[0010] Another aspect of the present invention provides a method of creating an uninterrupted sleep surface with two bladders. The method includes providing a first elongate bladder and a second elongate bladder. The bladders are then juxtaposed and joined. Joining the bladders is accomplished through heat welding, zipping, connecting with hook and loop fasteners, connecting with snap fasteners, tying the bladders together, or any acceptable fastening means.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] Fig. 1 is a perspective view of sections of two bladders to be joined to form the sleep surface of the present invention;

[0012] Fig. 2 is a perspective view of a joined portion of a preferred embodiment of the sleep surface of the present invention; and,

[0013] Fig. 3 is a perspective view of a joined portion of an alternative embodiment of the sleep surface of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0014] Referring now to Figure 1, there is shown a pair of air bladders 12 and 14 that are to be joined to form an air mattress 10 of the present invention. The air mattress 10 is designed to accommodate one person on each bladder 12 and 14. Both of the air bladders 12 and 14 have upper surfaces 16, lower surfaces 18 and longitudinal sides. The

longitudinal side 20 of the first air bladder 12 includes an upper lip 22 and a lower lip 24. Similarly, the longitudinal side 21 of the second bladder 14 includes an upper lip 26 and a lower lip 28.

[0015] Referring now to Figure 2, the air mattress 10 of the present invention has been formed by joining the longitudinal side 20 of the first air bladder 12 to the longitudinal side 21 of the second bladder 14. In a preferred embodiment of the present invention, the upper surface 16 of the first air bladder 12 may be made continuous with the upper surface 16 of the second air bladder 14 by permanently attaching the upper lip 22 of the first longitudinal side 20 to the upper lip 26 of the second longitudinal side 21. In this manner a permanent union 30 is created between the first longitudinal side 20 of the first air bladder 12 and the longitudinal side 21 of the second air bladder 14. One skilled in the art will realize that, the term "continuous", as used herein, is referring to the somewhat planar and horizontal upper surface of the resulting mattress 10. This may be accomplished by joining a portion or all of the upper lip 22 of the first longitudinal side 20 to the upper lip 26 of the second longitudinal side 21. Additionally, this union may be intermittent.

[0016] More preferably, the strength and integrity of the union 30 may be increased by making the lower surface 18 of the first air bladder 12 continuous with the lower surface 18 of the second air bladder 14. This continuity may be achieved by permanently attaching the lower lip 24 of the first longitudinal side 20 to the lower lip 28 of the second longitudinal side 21. The permanent union 30 may be achieved through any acceptable joining mechanisms or techniques including, but not limited to, heat welding, adhering, bonding, or sewing.

[0017] More specifically, the union 30 of the embodiment shown in Figure 2 has been formed by overlapping the upper lips 22 and 26, overlapping the lower lips 24 and 28, and joining the contacting surfaces together. The resulting union 30 is further strengthened, in a preferred embodiment, by adding reinforcement members 32 over the joined lips on the upper and lower surfaces 16 and 18, and joining these members to both bladders 12 and 14.

[0018] Reputable airbed manufacturers warranty the bladders sold against leaks. In the event of a leak in one of the bladders 12 or 14, the manufacturer will send a replacement bladder in exchange for the faulty bladder. If the airbed includes a mattress 10 that includes two bladders 12 and 14 that are permanently joined, the exchange will necessarily include the shipment of a non-defective bladder along with the defective bladder. In order to minimize the additional shipping charges as well as the costs associated with accepting a perfectly functional bladder as defective, a preferred embodiment of the mattress 10 is shown in Fig. 3 that includes a separable union 32 that may be disassembled in the event that it is desired to separate the bladders 12 and 14, such as for purposes of exchanging a defective bladder.

[0019] The separable union 32 is effected by a joining mechanism 34. The joining mechanism 34 is shown as a zipper but one skilled in the art will quickly realize that other joining mechanisms may be utilized without departing from the scope of the invention; for example, hook and loop fasteners, adhesives, snaps, laces, buttons, magnets, or the like may be used. Also, the union 32 may be continuous, intermittent, or partial. Preferably, a first portion 36 of the joining mechanism 34 is attached to the upper lip 22 of the first bladder 12. A second portion 38 of the joining mechanism 34 is attached to the upper lip 26 of the second bladder 14. The first portion 36 and the second portion 38 are configured to mate with each other in order to form separable union 32.

[0020] Preferably, the separable union 32 further includes a second joining mechanism 40, which may or may not be similar to joining mechanism 34. The joining mechanism 40 includes a first portion 42 attached to the lower lip 24 of the first bladder 12 and a second portion 44 attached to the lower lip 28 of the second bladder 14. The first and second portions 42 and 44 are configured to mate with each other to join the lower lips 24 and 28 together.

[0021] Heretofore, the unions, either permanent or separable, have been described as being formed along either the top edges of the adjacent bladders 12 and 14, or the top and bottom edges of bladders 12 and 14. Some of the objects of the present invention may be

accomplished by adjoining the bladders 12 and 14 along a mid portion of their adjacent side walls. However, doing so not only lowers the effective "bridge" that is formed between the two bladders 12 and 14, it necessarily increases the separation force felt by the union when a person is laying on or near the union. Therefore, while such a union is contemplated and considered within the scope of this disclosure, the union would have to be of heavier construction to withstand the additional force. Thus, the preferred union, either permanent or separable, is one where the top edges are joined.

[0022] In operation, a sleep surface having a continuous upper surface 16 by juxtaposing the first bladder 12 and the second bladder 14. Once juxtaposed, a union 30 or 32 is formed by attaching the upper lip 22 of the first bladder 12 to the upper lip 26 of the second bladder 14. Preferably, the union may be made stronger by attaching the lower lip 24 of the first bladder 12 to the lower lip 28 of the second bladder 14.

[0023] Those skilled in the art will further appreciate that the present invention may be embodied in other specific forms without departing from the spirit or central attributes thereof. In that the foregoing description of the present invention discloses only exemplary embodiments thereof, it is to be understood that other variations are contemplated as being within the scope of the present invention.

[0024] Accordingly, the present invention is not limited in the particular embodiments which have been described in detail therein. Rather, reference should be made to the appended claims as indicative of the scope and content of the present invention.